Table 13-7. Percent Weight Losses from Preparation of Various Vegetables

Type of Vegetable	Mean Net Cooking Loss (%)[1] Mean	Range of Means	Standard Deviation	Mean Net Post Cooking Loss (%)[2] Mean	Range of Means	Standard Deviation
Asparagus	2[illegible]	5 to 4[illegible]	1[illegible]	--	--	--
Beets	2[illegible]	4 to 6[illegible]	1[illegible]	--	--	--
Broccoli	14	0 to 3[illegible]	1[illegible]	--	--	--
Cabbage	1[illegible]	4 to 2[illegible]	6	--	--	--
Carrots	1[illegible]	2 to 4.	1[illegible]	--	--	--
Corn	2[illegible]	-1 to 64	2[illegible]	--	--	--
Cucumbers	1[illegible]	5 to 4[illegible]	14	--	--	--
Lettuce	2[illegible]	6 to 3[illegible]	1[illegible]	--	--	--
Lima Beans	-1[illegible]	-143 to 56	6[illegible]	--	--	--
Okra	1[illegible]	-10 to 4[illegible]	1[illegible]	--	--	--
Onions	[illegible]	-90 to 6[illegible]	3[illegible]	--	--	--
Peas, green	[illegible]	-147 to 6[illegible]	6[illegible]	--	--	--
Peppers	1[illegible]	3 to 2[illegible]	[illegible]	--	--	--
Pumpkins	1[illegible]	8 to 3[illegible]	11	--	--	--
Snap Beans	1[illegible]	5 to 4[illegible]	1[illegible]	--	--	--
Tomatoes	1[illegible]	2 to 5[illegible]	10	--	--	--
Potatoes	-2[illegible]	-527 to 46	12[illegible]	22	1 to 3[illegible]	11

[1] Includes losses due to paring, trimming, flowering the stalk, thawing, draining, scraping, shelling, slicing, husking, chopping, and dicing and gains from the addition of water, fat or other ingredients. Averaged over various preparation methods.

[2] Includes losses from draining or removal of skin.

Source: USDA, 1975

weight is inappropriate, because individual intake rates were indexed to the reported body weights of the survey respondents. However, if there is a need to compare the total intake data presented here to other intake data in units of g/day, a body weight less than 70 kg (i.e., approximately 60 kg; calculated based on the number of respondents in each age category and the average body weights for these age groups, as presented in Volume I, Chapter 7) should be used because the total survey population included children as well as adults.

13.4. ADVANTAGES AND LIMITATIONS

The USDA NFCS data set is the largest publicly available source of information on food consumption habits in the United States. The advantages of using this data set are that it is expected to be representative of the U.S. population and that it provides information on a wide variety of food groups. However, the data collected by the USDA NFCS are based on short-term dietary recall and the intake distributions generated from them may not accurately reflect long-term intake patterns, particularly with respect to the tails (extremes) of the distributions. Also, the two survey components (i.e., household and individual) do not define food items/groups in a consistent manner; as a result some errors may be introduced into these analyses because the two survey components are linked. The results presented here may also be biased by assumptions that are inherent in the analytical method utilized. The analytical method may not capture all high-end consumers with households because average serving sizes are used in calculating the proportion of homegrown food consumed by each household member. Thus, for instance, in a two-person household where one member had high intake and one had low intake, the method used here would assume that both members had an equal and moderate level of intake. In addition, the analyses assume that all family members consume a portion of the home produced food used within the household. However, not all family members may consume each home produced food item and serving sizes allocated here may not be entirely representative of the portion of household foods consumed by each family member. As was mentioned in Section 13.2, no analyses were performed for the under 1 year age group due to the above concerns. Below, in Section 13.5, a

recommended approach for dealing with this age group is presented.

The preparation loss factors discussed in Section 13.2 are intended to convert intake rates based on "household consumption" to rates reflective of what individuals actually consume. However, these factors do not include losses to spoilage, feeding to pets, food thrown away, etc.

It should also be noted that because this analysis is based on the 1987-88 NFCS, it may not reflect recent changes in food consumption patterns. The low response rate associated with the 1987-88 NFCS also contributes to the uncertainty of the homegrown intake rates generated using these data.

13.5. RECOMMENDATIONS

The distribution data presented in this study may be used to assess exposure to contaminants in foods grown, raised, or caught at a specific site. Table 13-72 presents the confidence ratings for homegrown food intake. The recommended values for mean intake rates among consumers for the various home produced foods can be taken from the tables presented here; these can be converted to per capita rates by multiplying by the fraction consuming. The data presented here for consumers of home produced foods represent average daily intake rates of food items/groups over the seven-day survey period and do not account for variations in eating habits during the rest of the year; thus the percentiles presented here (except the seasonally adjusted) are only valid when considering exposures over time periods of about one week. Similarly, the figures for percentage consuming are also only valid over a one week time period. Since the tabulated percentiles reflect the distribution among consumers only, Eqn. 13-2 must be used to convert the percentiles shown here to ones valid for the general population.

In contrast, the seasonally adjusted percentiles are designed to give percentiles of the long term distribution of average daily intake and the percentage consuming shown with this distribution is designed to estimate the percent of the population consuming at any time during a year. However, because the assumptions mentioned in Section 13.2 can not be verified to hold, these upper percentiles must be assigned a low confidence rating. Eqn. 13-2 may also be used with this distribution to convert percentiles among consumers to percentiles for the general population.

For all the rates tabulated here, preparation loss factors should be applied, where appropriate. The form of the food used to estimate intake should be consistent with the form used to measure contaminant concentration.

As described above, the tables do not display rates for children under 1 year of age. For this age group, it is recommended that per-capita homegrown consumption rates be estimated using the following approach. First, for each specific home produced food of interest, the ratio of per capita intake for children under 1 year compared to that of children 1 to 2 years is calculated using the USDA CSFII 1989-1991 results displayed in Volume II, Chapters 9 and 11. Note these results are based on individual food intakes; however, they consider all sources of food, not just home produced. Second, the per-capita intake rate in the 1 to 2 year age group of the home produced food of interest is calculated as described above by multiplying the fraction consuming by the mean intake rate among consumers (both these numbers are displayed in the tables). Finally, the per capita homegrown intake rate in children under 1 year of the food of interest is estimated by multiplying the homegrown per-capita intake rate in the 1 to 2 year age group by the above ratio of intakes in the under 1 year age group as compared to the 1 to 2 year age group.

The AIHC Sourcebook (AIHC, 1994) used data presented in the 1989 version of the Exposure Factors Handbook which reported data from the USDA 1977-78 NFCS. In this Handbook, new analyses of more recent data from USDA were conducted. Numbers, however, cannot be directly compared with previous values since the results from the new analyses are presented on a body weight basis.

13.6. REFERENCES FOR CHAPTER 13

American Industrial Health Council (AIHC) (1994) Exposure factors sourcebook. AIHC, Washington, DC.

National Gardening Association. (1987) National gardening survey: 1986-1987. Burlington, Vermont: The National Gardening Association, Inc.

USDA. (1975) Food yields summarized by different stages of preparation. Agriculture Handbook No. 102. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.

Table 13-33. Seasonally Adjusted Consumer Only Homegrown Intake (g/kg-day)

Population Group	Percent Consuming	P1	P5	P10	P25	P50	P75	P90	P95	P99	P100
Total Vegetables											
Northeast	16.50	1.16E-03	1.59E-02	3.56E-02	1.99E-01	4.55E-01	1.37E+00	3.32E+00	5.70E+00	8.78E+00	1.01E+01
Midwest	33.25	3.69E-03	4.11E-02	8.26E-02	2.91E-01	8.11E-01	1.96E+00	4.40E+00	7.41E+00	1.31E+00	2.01E+01
South	24.00	4.78E-03	3.24E-02	5.58E-02	2.05E-01	6.10E-01	1.86E+00	3.95E+00	5.63E+00	1.20E+01	1.62E+01
West	23.75	1.80E-03	1.91E-02	3.83E-02	1.14E-01	4.92E-01	1.46E+00	2.99E+00	5.04E+00	8.91E+00	1.12E+01
All Regions	24.60	5.00E-03	2.90E-02	5.90E-02	2.19E-01	6.38E-01	1.80E+00	4.00E+00	6.08E+00	1.17E+01	2.01E+01
Total Fruit											
Northeast	3.50	3.96E-03	1.97E-02	4.76E-02	1.73E-01	3.61E-01	6.55E-01	1.48E+00	3.00E+00	5.10E+00	5.63E+00
Midwest	12.75	1.22E-03	7.01E-03	1.46E-02	1.36E-01	7.87E-01	2.98E+00	5.79E+00	9.52E+00	2.22E+01	2.71E+01
South	8.00	6.13E-03	3.23E-02	1.09E-01	3.84E-01	9.47E-01	2.10E+00	6.70+00	1.02E+01	1.49E+01	1.64E+01
West	17.75	5.50E-04	5.66E-02	8.82E-02	2.87E-01	6.88E-01	1.81E+00	4.75E+00	8.54E+00	1.45E+01	1.84E+01
All Regions	10.10	2.00E-03	1.90E-02	6.20E-02	2.50E-01	7.52E-01	2.35E+00	5.61E+00	9.12E+00	1.76E+01	2.71E+01
Total Meat											
Northeast	6.25	3.78E-03	3.01E-02	7.94E-02	1.25E-01	2.11E-01	7.00E-01	1.56E+00	1.91E+00	4.09E+00	4.80E+00
Midwest	9.25	1.77E-03	3.68E-02	2.21E-01	5.25E-02	1.61E+00	3.41E+00	5.25E+00	7.45E+00	1.19E+01	1.36E+01
South	5.75	6.12E-03	2.88E-02	5.02E-02	1.86E-01	5.30E-01	1.84E+00	3.78E+00	4.95E+00	8.45E+00	9.45E+00
West	9.50	7.24E-04	2.83E-02	9.56E-02	2.35E-01	5.64E-01	1.30E+00	2.29E+00	3.38E+00	7.20E+00	9.10E+00
All Regions	7.40	3.20E-03	3.90E-02	9.20E-02	2.20E-01	6.55E-01	1.96E+00	4.05E+00	5.17E+00	9.40E+00	1.36E+01

Table 15-167. Descriptive Statistics for Residential Occupancy Period

Statistic	Residential occupancy period (years)		
	Both genders	Males only	Females only
	N[a] = 500,000	N = 244,274	N = 255,726
Mean	11.7	11.1	12.3
5th percentile	2	2	2
10th percentile	2	2	2
25th percentile	3	4	5
50th percentile	9	8	9
75th percentile	16	15	17
90th percentile	26	24	28
95th percentile	35	31	35
98th percentile	41	39	45
99th percentile	47	44	49
99.5th percentile	51	48	53
99.8th percentile	55	53	58
99.9th percentile	59	56	61
Second largest value	75	73	75
Largest value	87	73	87

a = Number of simulated persons
Source: Johnson and Capel, 1992.

Table 15-168. Descriptive Statistics for Both Genders by Current Age

Current age, years	Residential occupancy period (years)						
	Mean	Percentile					
		25	50	75	90	95	99
3	6.5	3	5	8	13	17	22
6	8.0	4	7	10	15	18	22
9	8.9	5	8	12	16	18	22
12	9.3	5	9	13	16	18	23
15	9.1	5	8	12	16	18	23
18	8.2	4	7	11	16	19	23
21	6.0	2	4	8	13	17	23
24	5.2	2	4	6	11	15	23
27	6.0	3	5	8	12	16	27
30	7.3	3	6	9	14	19	32
33	8.7	4	7	11	17	23	39
36	10.4	5	8	13	21	28	47
39	12.0	5	9	15	24	31	48
42	13.5	6	11	18	27	35	49
45	15.3	7	13	20	31	38	52
48	16.6	8	14	22	32	39	52
51	17.4	9	15	24	35	39	50
54	18.3	9	16	25	34	40	50
57	19.1	10	17	26	35	41	51
60	19.7	11	18	27	35	40	51
63	20.2	11	19	27	36	41	51
66	20.7	12	20	28	36	41	50
69	21.2	12	20	29	37	42	50
72	21.6	13	20	29	37	43	53
75	21.5	13	20	29	38	43	53
78	21.4	12	19	29	38	44	53
81	21.2	11	20	29	39	45	55
84	20.3	11	19	28	37	44	56
87	20.6	10	18	29	39	46	57
90	18.9	8	15	27	40	47	56
All ages	11.7	4	9	16	26	35	47

Source: Johnson and Capel, 1992.